

IN THE CLAIMS:

Please cancel claims 11-20 without prejudice. Please add new claims 21-30 as follows:

~~21~~ (New) A method for switching AC power flow through and deriving a supply of DC power from one side of an AC power circuit, comprising the steps of:

- 31
- a) providing a gate-enabled thyristor for controlling switching of AC power flow through the circuit, said thyristor having ON and OFF states;
 - b) deriving a source of constant DC voltage from said AC power flow from a small portion of every AC half cycle or full cycle which appears across said thyristor in each of said ON state thereof; and
 - c) alternately, (i) enabling said thyristor into an ON state by providing a gate current pulse at a specified time dictated by a control unit at any time in said AC half or full cycle and after the deriving said DC voltage, and (ii) maintaining said thyristor in said OFF state by not providing gate current pulse thereto.

2
~~22~~ (New) An electrical current control apparatus for operatively interconnecting one side of a source of AC current with an AC load, comprising:

- 24
- a) a thyristor having first and second leads coupled between said source and said AC load, said thyristor having, ON and OFF states and being connected in said first lead so as to permit flow of AC current through said first lead in response to activation of said thyristor by a gate current pulse, said thyristor further being configured to remain actuated after termination of said gate current pulse so long as a predetermined minimum current is flowing through said first lead;
- B

- b) power conversion means coupled between said first and second leads and effective for converting a small portion of AC current at the beginning of each half cycle which appears across the thyristor in each of said ON states thereof into a source of constant DC voltage power supply;
- c) control means powered by said DC voltage for selectively providing an actuation output at a specified time dictated by the control means at any time after deriving the said DC voltage power supply from each half cycle of said AC current; and
- d) a driver for selectively initiating or not initiating said gate current pulse to said thyristor in response to said actuation output from said control means said driver being connected to said first lead in parallel with said thyristor, so that said pulse if initiated is terminated by actuation of said thyristor and the remainder of said half cycle of said AC current flows through said thyristor and said thyristor remains actuated until said AC current drops below said predetermined minimum current.

3
23. (New) The control apparatus of claim 22, wherein said control means comprises a programmable microcontroller.

4
24. (New) The control apparatus of claim 22, wherein said power conversion means comprises means for diverting a small portion of said AC current at the beginning of every half cycle of said AC current and adapting said portion of said AC current to said constant DC voltage power supply.

5
25. (New) An apparatus for selectively energizing an AC electrical load from one side of an AC power circuit, comprising:

- a) a thyristor having ON and OFF states, said thyristor being coupled between first and second AC current leads for controlling a flow of AC line current from said thyristor to said AC electrical load;
- b) a microcontroller which is programmed to selectively provide or not provide enabling gate current pulses to said thyristor; and
- c) a constant DC voltage power supply coupled with said thyristor and effective to derive electrical power for said microcontroller from a small portion of every half cycle or full cycle of said AC current which appears across said thyristor in each said ON state thereof.

31
6
26. (New) An apparatus for energizing an AC electrical load from one side of an AC power circuit, comprising:

- a) a thyristor having ON and OFF states, said thyristor being coupled between first and second AC current leads for controlling a flow of AC line current from said thyristor to said AC electrical load;
- b) a zero crossing detector for detecting zero crossings of a sinusoidal waveform of said AC line current;
- c) a microcontroller which is programmed to selectively provide or not provide a gate current pulse to said thyristor in response to said detector detecting a zero crossing; and
- d) means for deriving constant DC voltage power supply from a small portion of every half AC cycle or full AC cycle which appears across said thyristor in each

of said ON state thereof, and for supplying said constant DC voltage power to
said microcontroller.

27. (New) An apparatus for selectively energizing a high-voltage AC electrical load,
comprising:

- a) a switch housing mountable within the interior of dwelling connected to one side of AC power supply and to one side of the said AC electrical load;
- b) a switch mounted to said housing having an "off" position, an "on" position, and a "mode" position;
- c) means responsive to selection of said "off" position for interrupting flow of AC current to said load;
- d) means responsive to selection of said "on" position for completing said circuit as to provide continuous flow of current to said load;
- e) a microcontroller mounted in said switch housing;
- f) means responsive to selection of said "mode" position for completing and interrupting said circuit so as to permit flow of current through a thyristor having ON and OFF states connected in said leads so that said AC electrical load is energized and de-energized in accordance with a predetermined sequence which is programmed into said microcontroller; and
- g) means for deriving a source of constant DC voltage power from a small portion of every half AC cycle or full AC cycle, which appears across said thyristor in each of said ON state thereof and for supplying said constant DC voltage power to said microcontroller.

⁸
~~28.~~ (New) The apparatus of Claim ⁷~~27~~, wherein said microcontroller is programmed to turn said AC load ON and OFF at long, random-time intervals.

⁹
~~29.~~ (New) The apparatus of Claim ⁷~~27~~, wherein said microcontroller is programmed to turn said AC load ON and to a state that is less than full ON at a periodic rate.

¹⁰
~~30.~~ (New) The apparatus of Claim ⁷~~27~~, wherein said microcontroller is programmed to turn said AC load ON for predetermined interval of time and then OFF thereafter.
